



V&A and CERN Classroom Live

Thursday, 21 January 2021

10am – 10.45am

In the lead-up to our *Alice: Curiouser and Curiouser* exhibition, your class can join us to go down the rabbit hole and experience an exclusive live-streamed guided tour of CERN's ALICE detector (A Large Ion Collider Experiment).

Go behind the scenes to learn how Science, Technology, Arts, Maths and Science combine in the work of physicists and artists at CERN, the European Organisation for Nuclear Research and one of the world's most respected centres for scientific research. Find out how scientists at CERN are trying to answer some of the biggest questions about our universe! And how artists are being inspired by these discoveries.

More about the V&A and the *Alice: Curiouser and Curiouser* exhibition

The V&A is the world's leading museum of art, design and performance. It has a permanent collection of over 2.3 million objects that span over 5,000 years of human creativity. The *Alice: Curiouser and Curiouser* exhibition opens on 27 March 2021. Exploring its origins, adaptations and reinventions over 157 years, this immersive and theatrical show charts the evolution of Alice's Adventures in Wonderland from manuscript to a global phenomenon beloved by all ages.

The Alice books - *Alice's Adventures in Wonderland* and *Through the Looking Glass* written by Lewis Carroll - are a great springboard for the imagination and a trigger for curiosity and learning. The stories are full of mind-bending ideas and scientific concepts. On her adventures, Alice falls down a rabbit hole, steps through a mirror, and discovers a Wonderland where she grows, shrinks, and sees the world differently. The stories are rich with references to space, time and scale, subjects which are a continuing source of questioning for scientists and artists exploring our universe.

At CERN, the quantum physicists probe the fundamental structure of the smallest particles that make up everything around us. They do this using the world's largest and most complex scientific instruments. Their mission is to advance the boundaries of human knowledge by delving into the smallest building blocks of our universe.

In the *Alice: Curiouser and Curiouser* exhibition, we will be including two works of art inspired by the Arts at CERN programme. These artworks also reflect scientific concepts embedded within the Alice books.



- Iris Van Herpen's Infinity Dress which focuses on the exploration of matter inspired by her visits to CERN and a dialogue with physicists. A voluminous kinetic halo hovers around a magical feathered dress reflecting ideas of transformation, gravity, and materiality.
- Mariele Neudecker's film of the ALICE project at CERN immerses viewers in the underground world of research into dark matter. Neudecker captures the beauty of the scale and the extremes of the experiment, where the tiniest particles are beamed through 27km of tunnels through huge magnetic portals, shedding light on the extraordinary work undertaken by quantum physicists today.

In the spirit of Alice, artists and scientists delve into unknown worlds as their curiosity leads them to explore the unexpected and the unexplained

More about CERN

At CERN, the European Organization for Nuclear Research, physicists and engineers are probing the fundamental structure of the universe. Since CERN began in 1954, they have made many significant breakthroughs, both in particle physics (such as their early discovery of neutral currents) and technologies that have helped improve our day-to-day lives (including the World Wide Web).

Using the world's largest and most complex scientific instruments, they study the basic constituents of matter - fundamental particles that are made to collide together at close to the speed of light. ALICE is a detector dedicated to heavy-ion physics at the Large Hadron Collider. The 10,000-tonne ALICE detector – 26 m long, 16 m high, and 16 m wide – sits in a vast cavern 56 m below ground. The ALICE experiment is seeking to recreate the conditions that existed just a few picoseconds after the Big Bang. There are more than 1000 scientists from over 100 physics institutes in 30 countries collaborating on the experiment.

Why should I book on to this session?

This is a one-off opportunity to join the V&A and CERN for a live talk, tour and Q&A. Your students will see the real-life applications of scientific knowledge and investigation, problem solving, curiosity and creativity. Students will see how physicists, engineers, and artists are combining their knowledge and skills at CERN to investigate the biggest mysteries of our universe. Your students can enter Alice's curious wonderland of physics!



How does it link to the curriculum?

Exploring STEAM and cross-curricular learning

- Real-world applications of scientific knowledge and investigation
- Examples of real-world problem solving and seeing the world analytically
- Creativity and imagination within scientific contexts

Physics

- The matter of our universe, the Big Bang, particle model, atomic structure
- Scientific principles and investigation put into action e.g. collecting data, devising questions, testing hypotheses

D&T and Art & Design

- Insight into varied art, design and technology careers: curator, artist, designer, engineer
- Real-world applications of problem solving, creativity and collaboration skills
- The role of art, design, technology and creativity in different industries
- How artists and designers are finding inspiration from scientific sources

What will be included in the event?

The session will last 45 minutes and includes:

- An introduction to the V&A Alice: Curiouser and Curiouser exhibition
- An introduction to CERN, their research and experiments, and the Arts at CERN programme
- A live-streamed guided tour of the ALICE detector
- Live Q&A with our speakers

Speakers

- Kate Bailey, Senior Curator and Producer, Theatre and Performance, V&A
- Mónica Bello, Curator and Head of Arts, CERN
- Dr Despina Hatzifotiadou, physicist and researcher in the ALICE experiment, CERN, researcher at INFN Bologna (Italian National Institute for Nuclear Physics)

How does booking and joining the session work?

Book your place via the online form, making sure to use a school email address to book. We will then follow up by email to confirm your booking. Prior to the day we will send over a Zoom link to join the session.



On the day of the event you will enter via CERN's Zoom account. We have a digital safeguarding policy in place to ensure safety of using this site which will be shared with you. Teachers enter the Zoom link in class with their students, preferably showing it on a large whiteboard/projector screen. We advise you check your school's firewall policies and internet connection before the session to ensure you can join the session.

How do I introduce my students to the V&A, CERN and the session?

Prior to the session you will receive a teachers' pack by email with pre- and post-session activities. The event is designed to be stand alone, but the teachers' pack will provide extra information and ideas to support the session.

If you would like to ask any questions prior to booking please email innovate@vam.ac.uk